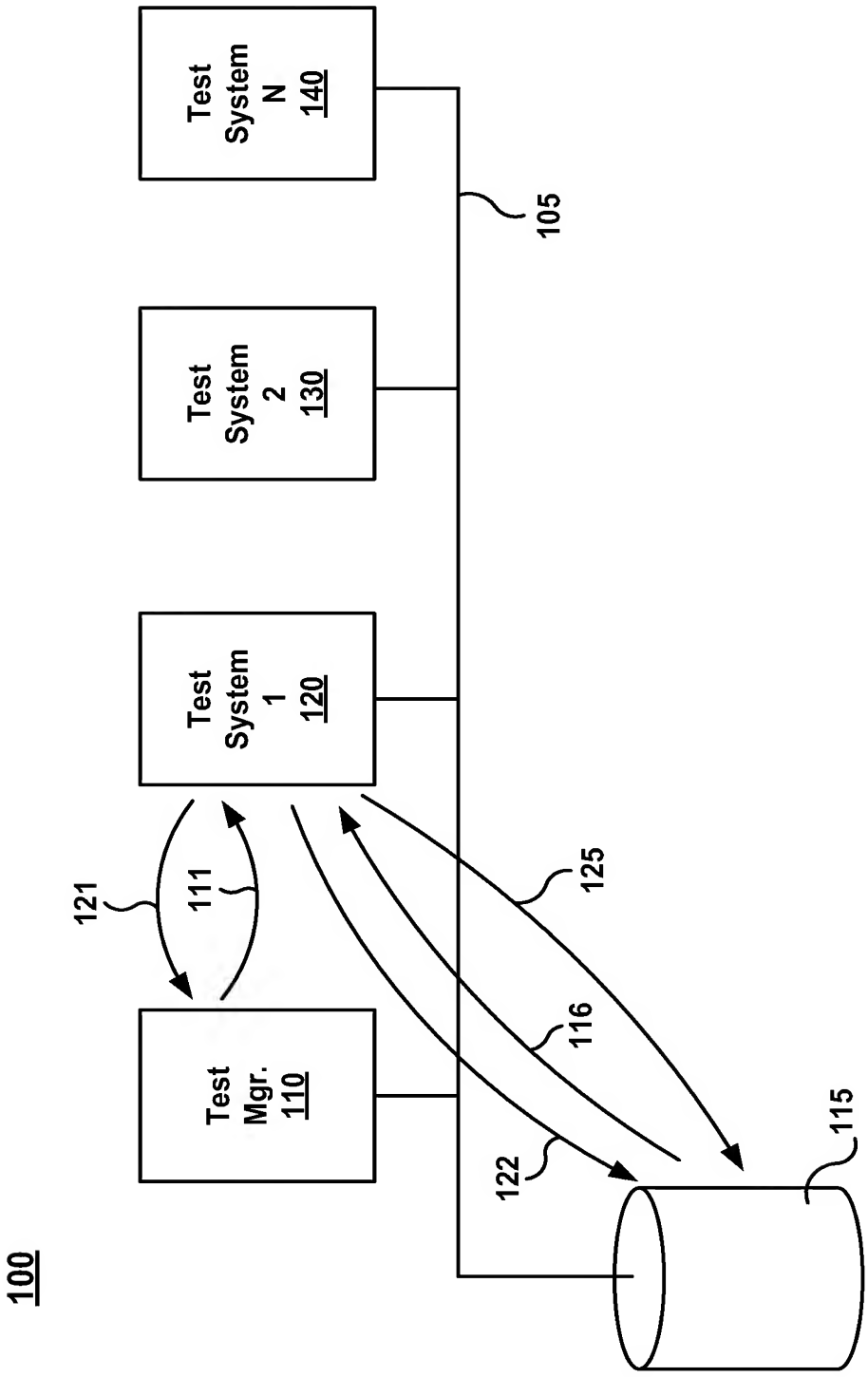
Test System N 140
Test System 2 130
Test System 1 120
Test Mgr. 110
105
111
121
125
116
122
115
100

FIG. 1

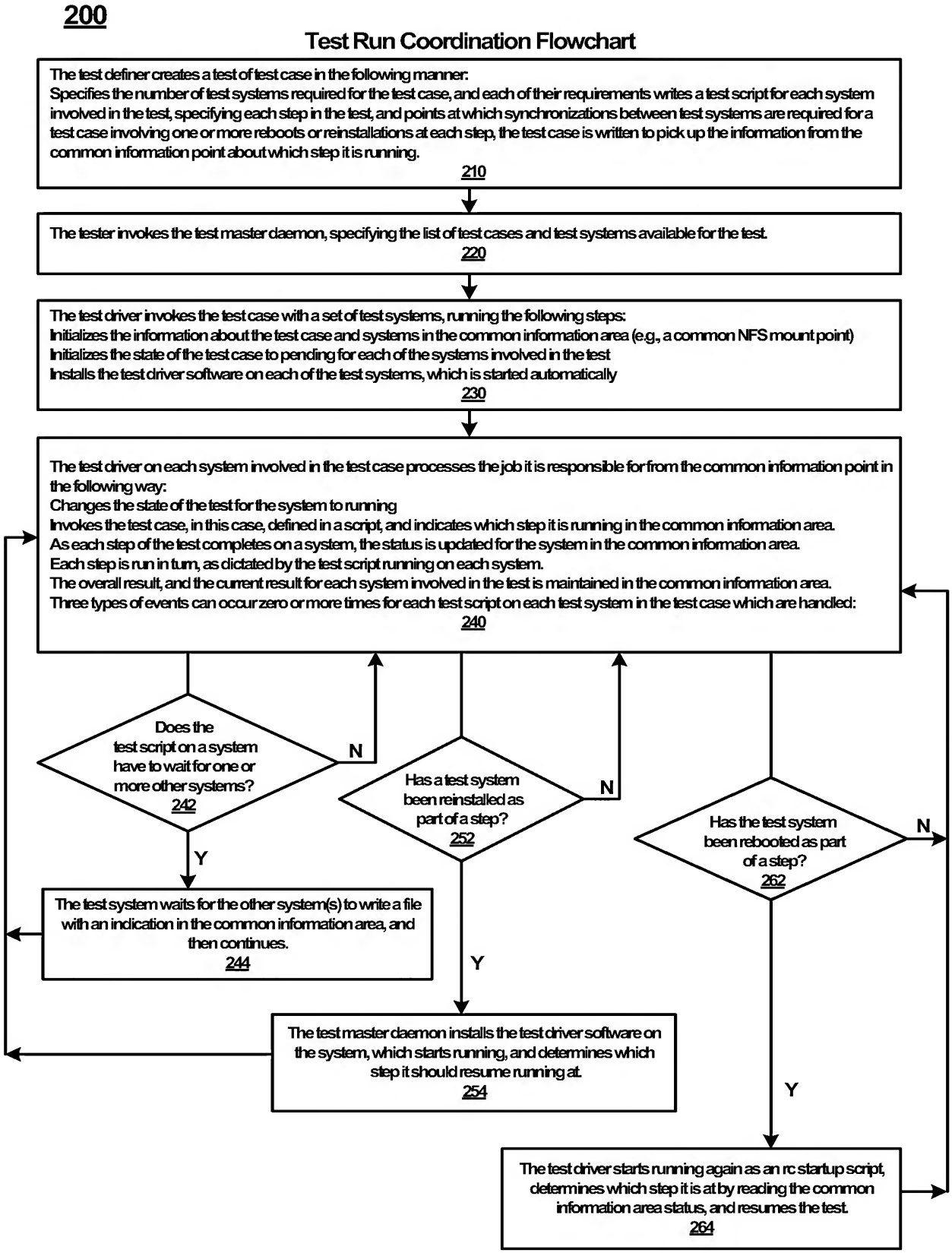
200
Test Run Coordination Flowchart
The test definer creates a test of test case in the following manner:
Specifies the number of test systems required for the test case, and each of their requirements writes a test script for each system involved in the test, specifying each step in the test, and points at which synchronizations between test systems are required for a test case involving one or more reboots or reinstallations at each step, the test case is written to pick up the information from the common information point about which step it is running.
210
The tester invokes the test master daemon, specifying the list of test cases and test systems available for the test.
220
The test driver invokes the test case with a set of test systems, running the following steps:
Initializes the information about the test case and systems in the common information area (e.g., a common NFS mount point)
Initializes the state of the test case to pending for each of the systems involved in the test
Installs the test driver software on each of the test systems, which is started automatically
230
The test driver on each system involved in the test case processes the job it is responsible for from the common information point in the following way:
Changes the state of the test for the system to running
Invokes the test case, in this case, defined in a script, and indicates which step it is running in the common information area.
As each step of the test completes on a system, the status is updated for the system in the common information area.
Each step is run in turn, as dictated by the test script running on each system.
The overall result, and the current result for each system involved in the test is maintained in the common information area.
Three types of events can occur zero or more times for each test script on each test system in the test case which are handled:
240
Does the test script on a system have to wait for one or more other systems?
242
N
Y
The test system waits for the other system(s) to write a file with an indication in the common information area, and then continues.
244
Has a test system been reinstalled as part of a step?
252
N
Y
The test master daemon installs the test driver software on the system, which starts running, and determines which step it should resume running at.
254
Has the test system been rebooted as part of a step?
262
N
Y
The test driver starts running again as an rc startup script, determines which step it is at by reading the common information area status, and resumes the test.
264

FIG. 2

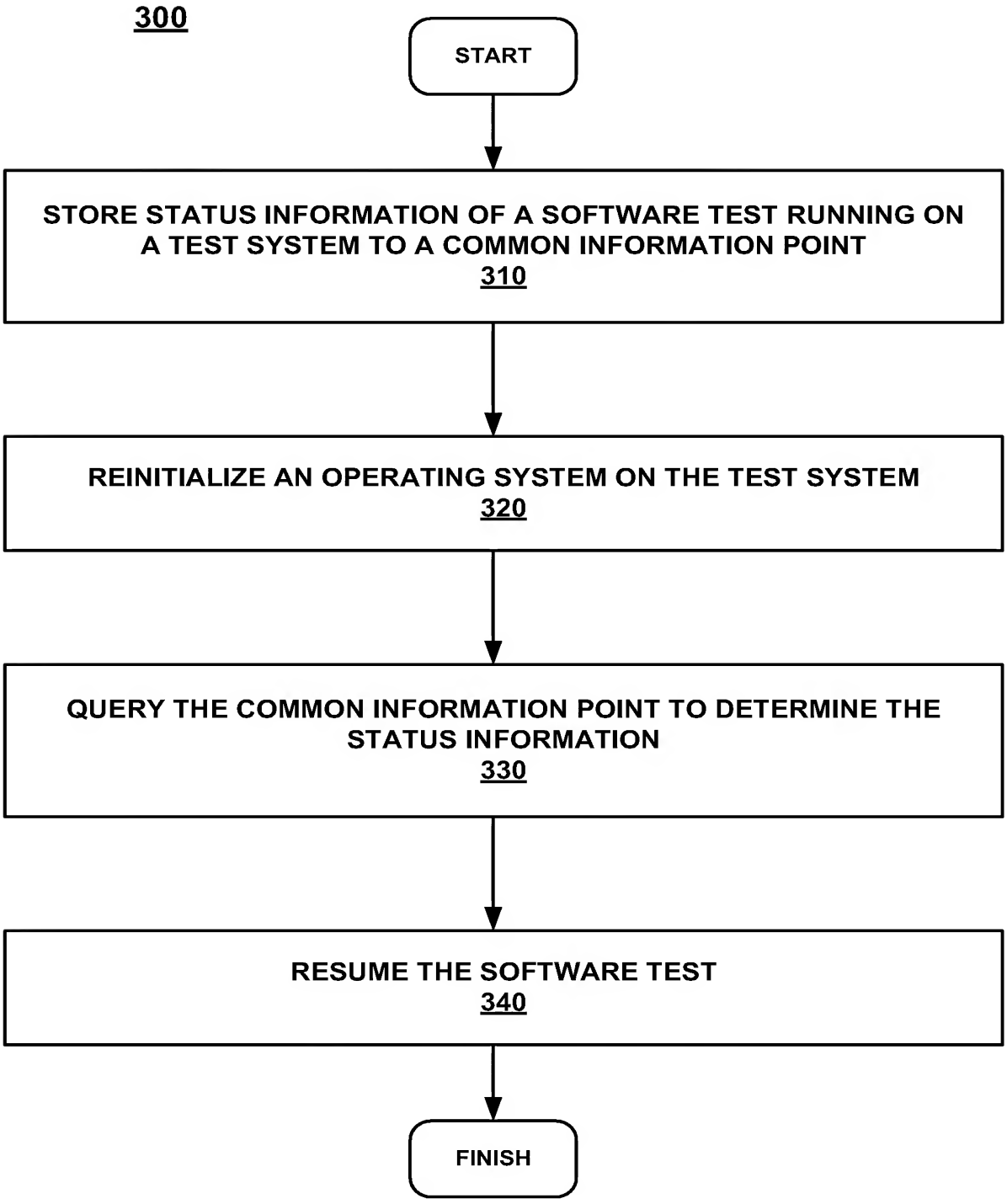
300
START
STORE STATUS INFORMATION OF A SOFTWARE TEST RUNNING ON A TEST SYSTEM TO A COMMON INFORMATION POINT
310
REINITIALIZE AN OPERATING SYSTEM ON THE TEST SYSTEM
320
QUERY THE COMMON INFORMATION POINT TO DETERMINE THE STATUS INFORMATION
330
RESUME THE SOFTWARE TEST
340
FINISH

FIG.3

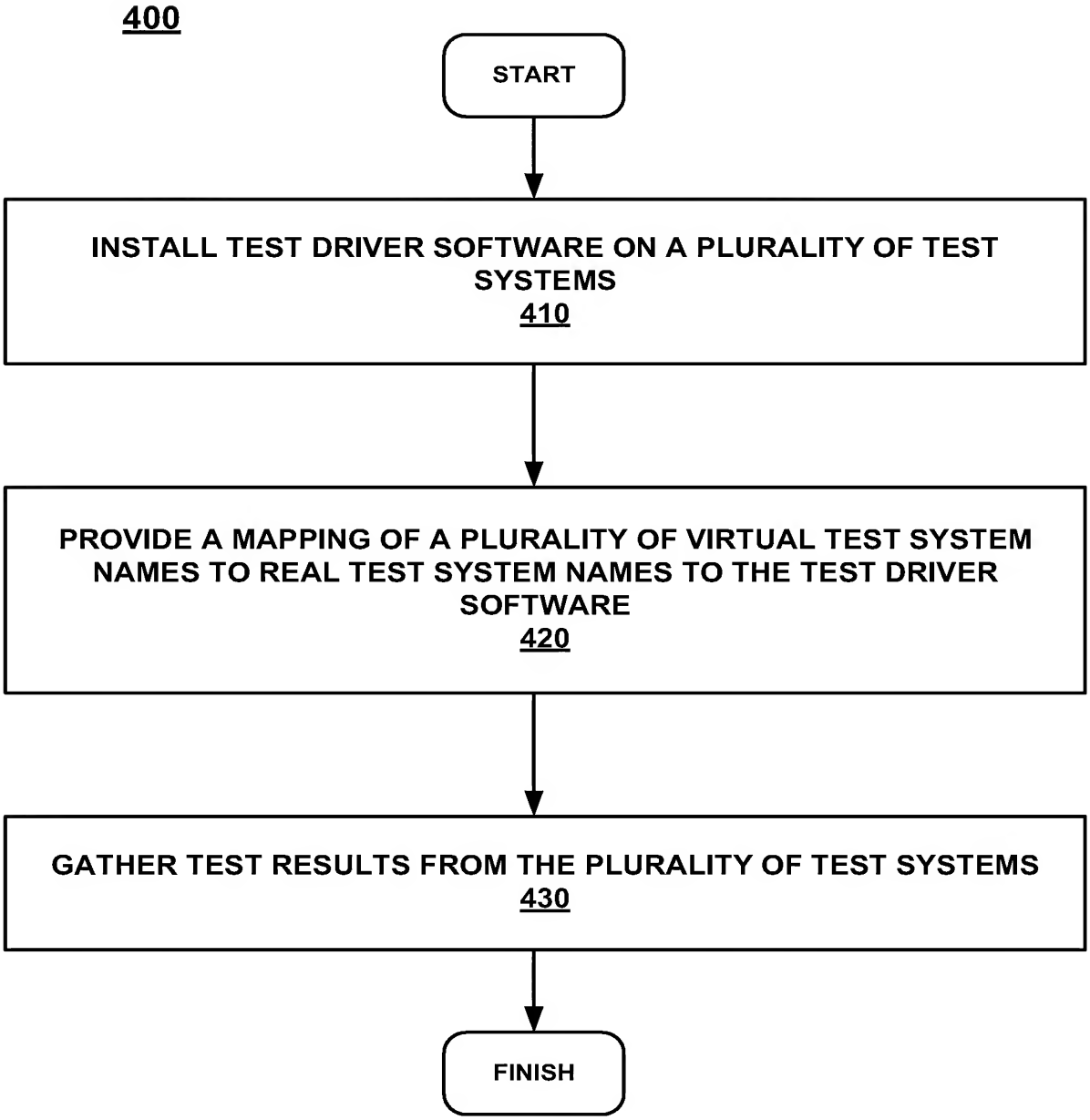
400
START
INSTALL TEST DRIVER SOFTWARE ON A PLURALITY OF TEST SYSTEMS
410
PROVIDE A MAPPING OF A PLURALITY OF VIRTUAL TEST SYSTEM NAMES TO REAL TEST SYSTEM NAMES TO THE TEST DRIVER SOFTWARE
420
GATHER TEST RESULTS FROM THE PLURALITY OF TEST SYSTEMS
430
FINISH

FIG. 4